



**CONESTOGA-ROVERS  
& ASSOCIATES**

5900 Hollis Street, Suite A  
Emeryville, California 94608  
Telephone: (510) 420-0700 Fax: (510) 420-9170  
www.CRAworld.com

## TRANSMITTAL

DATE: February 23, 2010 REFERENCE NO.: 060204  
PROJECT NAME: 2301-2307 Lincoln Avenue, Alameda  
To: Jerry Wickham  
Alameda County Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

**RECEIVED**  
  
2:45 pm, Feb 24, 2010  
  
Alameda County  
Environmental Health

Please find enclosed:  Draft  Final  
 Originals  Other  
 Prints

Sent via:  Mail  Same Day Courier  
 Overnight Courier  Other GeoTracker and Alameda County FTP


QUANTITY	DESCRIPTION
1	Groundwater Monitoring Report - Fourth Quarter 2009

As Requested  For Review and Comment  
 For Your Use  \_\_\_\_\_  
 \_\_\_\_\_

**COMMENTS:**

If you have any questions regarding the contents of this document, please call Peter Schaefer at (510) 420-3319.

Copy to: Denis Brown, Shell Oil Products US, 20945 S. Wilmington Avenue, Carson, CA 90810  
Alan A. and Beverly M. Sebanc, Trustees, 2805 Ralston Avenue, Hillsborough, CA 94010  
Jake Torrens, AMEC Geomatrix, Inc., 2101 Webster Street, 12<sup>th</sup> Floor, Oakland, CA 94612

Completed by: Peter Schaefer Signed: 

Filing: Correspondence File



Mr. Jerry Wickham  
Alameda County Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

**Denis L. Brown**  
**Shell Oil Products US**  
HSE – Environmental Services  
20945 S. Wilmington Ave.  
Carson, CA 90810-1039  
Tel (707) 865 0251  
Fax (707) 865 2542  
Email [denis.l.brown@shell.com](mailto:denis.l.brown@shell.com)

Subject: 2301-2307 Lincoln Avenue  
Alameda, California  
SAP Code 165255  
Incident No. 97767044  
ACEH No. RO0002971

Dear Mr. Wickham,

The attached document is provided for your review and comment. Upon information and belief, I declare, under penalty of perjury, that the information contained in the attached document is true and correct.

As always, please feel free to contact me directly at (707) 865-0251 with any questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read "Denis L. Brown", is written over a horizontal line.

Denis L. Brown  
Project Manager



## **GROUNDWATER MONITORING REPORT - FOURTH QUARTER 2009**

**FORMER SHELL SERVICE STATION  
2301-2307 LINCOLN AVENUE  
ALAMEDA, CALIFORNIA**

**SAP CODE           165255  
INCIDENT NO.     97767044  
AGENCY NO.       RO0002971**

**FEBRUARY 23, 2010  
REF. NO. 060204 (9)**

This report is printed on recycled paper.

**Prepared by:  
Conestoga-Rovers  
& Associates**

5900 Hollis Street, Suite A  
Emeryville, California  
U.S.A. 94608

Office: (510) 420-0700  
Fax: (510) 420-9170

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REPORT

## 1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) prepared this report on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell).

### 1.1 SITE INFORMATION

Site Address	2301-2307 Lincoln Avenue, Alameda
Site Use	Strip mall
Shell Project Manager	Denis Brown
CRA Project Manager	Peter Schaefer
Lead Agency and Contact	ACEH, Jerry Wickham
Agency Case No.	RO0002971
Shell SAP Code	165255
Shell Incident No.	97767044

Date of most recent agency correspondence was January 12, 2010.

## 2.0 SITE ACTIVITIES, FINDINGS, AND DISCUSSION

### 2.1 CURRENT QUARTER'S ACTIVITIES

Blaine Tech Services, Inc. (Blaine) gauged and sampled the wells according to the established monitoring program for the site.

CRA prepared a vicinity map (Figure 1) and a groundwater contour and chemical concentration map (Figure 2). Blaine's report, presenting the analytical data, is included in Appendix A.

As discussed during CRA's September 4, 2009 telephone conversation with Alameda County Environmental Health (ACEH), CRA submitted a *Revised Subsurface Investigation Work Plan* on November 23, 2009 to replace our August 27, 2009 *Subsurface Investigation Work Plan*.

## 2.2 CURRENT QUARTER'S FINDINGS

Groundwater Flow Direction	Variable
Hydraulic Gradient	Variable
Depth to Water	7.62 to 8.86 feet below top of well casing

## 2.3 PROPOSED ACTIVITIES

CRA will proceed with the investigation proposed in our November 23, 2009 *Revised Subsurface Investigation Work Plan* with the modifications requested in ACEH's January 12, 2010 letter, which conditionally approves the work plan. CRA will submit a subsurface investigation report by May 21, 2010.

Blaine will gauge and sample wells according to the revised monitoring program for this site outlined below. This site will be monitored semiannually during the second and fourth quarters, and CRA will issue groundwater monitoring reports semiannually following the sampling events.

## 2.4 DISCUSSION

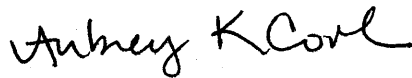
CRA sampled all monitoring wells quarterly for one hydrologic cycle (1 year, through the fourth quarter of 2009) and, as approved in ACEH's July 24, 2009 letter and per State Water Resources Control Board Resolution 2009-0042 adopted May 19, 2009, we will implement a semiannual monitoring and reporting schedule at the site, with sampling conducted during the second and fourth quarters.

Once the proposed groundwater monitoring well (MW-9) is installed, it will be sampled quarterly for one hydrologic cycle.

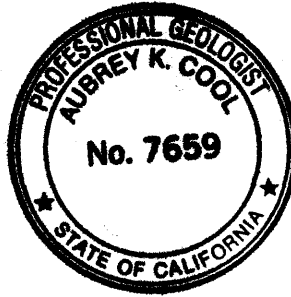
All of Which is Respectfully Submitted,  
CONESTOGA-ROVERS & ASSOCIATES



Peter Schaefer, CEG, CHG

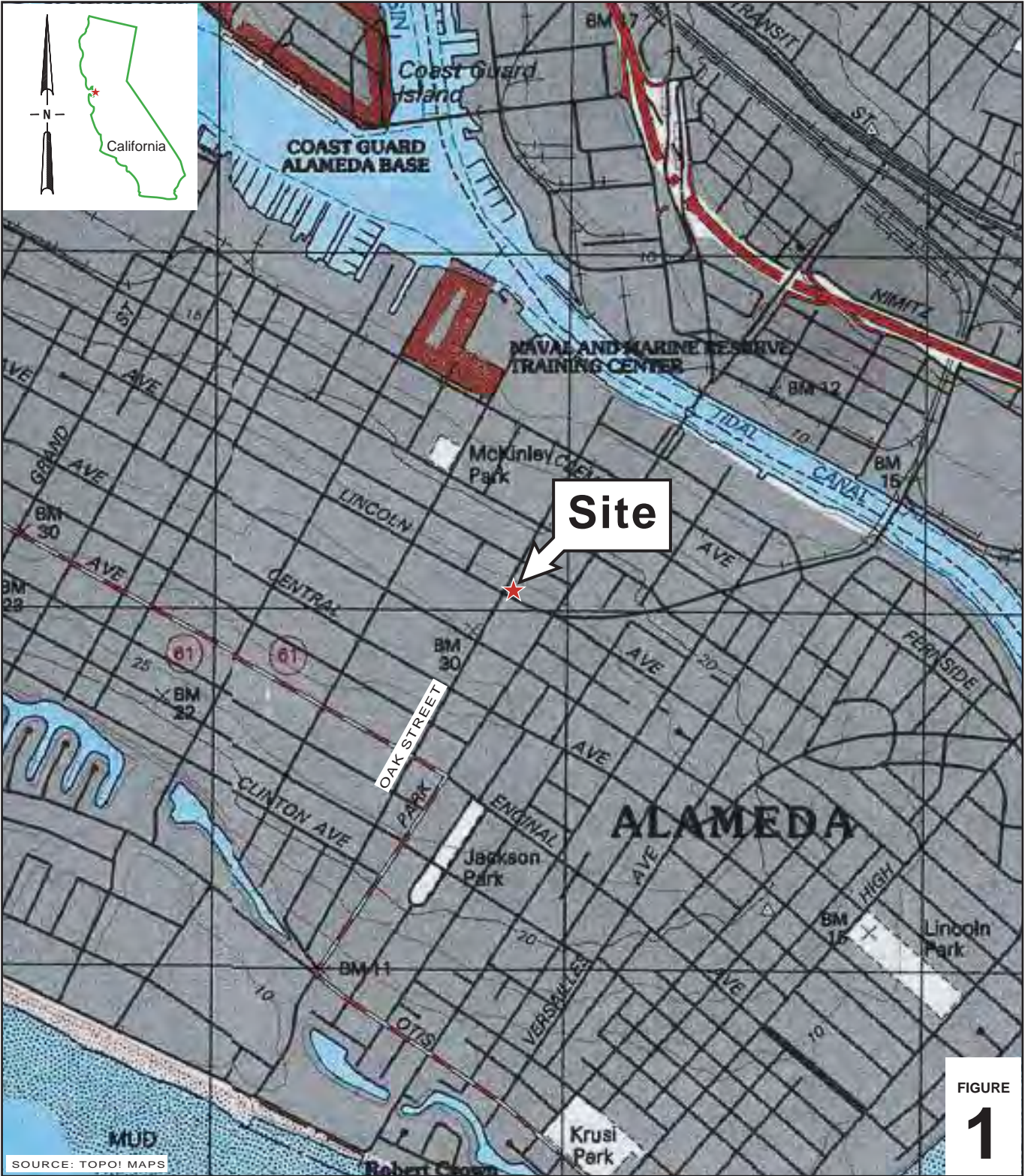


Aubrey K. Cool, PG





## FIGURES



I:\Shell\6-charts\0602--1060204-Alameda 2301-2307 Lincoln Ave\060204 FIGURES\060204 VICINITY.A1

FIGURE  
**1**

0 1/8 1/4 1/2 1  
SCALE : 1" = 1/4 MILE

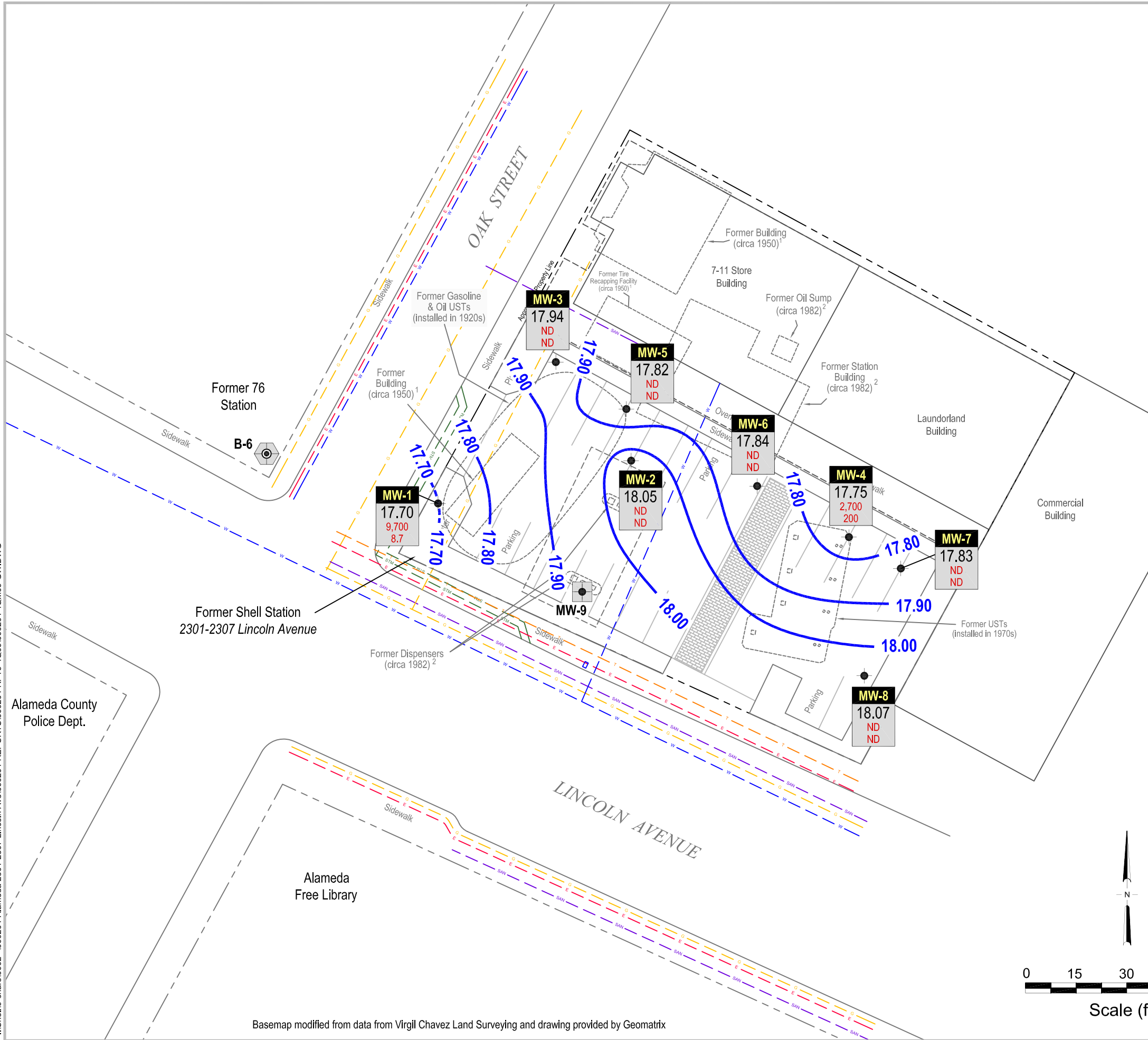
**Former Shell Service Station**  
2301-2307 Lincoln Avenue  
Alameda, California



**CONESTOGA-ROVERS  
& ASSOCIATES**

**Vicinity Map**

I:\Shell\6-chars\0602--\060204-Alameda 2301-2307 Lincoln Ave\060204-REPORTS\060204-RPT9-4009\060204-4CM09-GW.DWG



### EXPLANATION

- B-6** Proposed soil boring location
- MW-9** Proposed monitoring well location
- MW-1** Monitoring well location
- Electrical & Telecommunications line (E)
- Telecommunications & Cable TV line (T)
- Gas line (G)
- Storm drain line (STM)
- Sanitary sewer line (SAN)
- Water line (W)

**Sources:**

- Sanborn Fire Insurance Map, 1950
- Majors Civil Engineering, 1982

Groundwater elevation contour, in feet above mean sea level (msl)

Well	ELEV	TPHg	Benzene
MW-1	17.70	9.700	8.7
MW-2	18.05	ND	ND
MW-3	17.94	ND	ND
MW-4	17.75	2.700	200
MW-5	17.82	ND	ND
MW-6	17.84	ND	ND
MW-7	17.83	ND	ND
MW-8	18.07	ND	ND
MW-9			

**Notes:**  
ND = Not detected

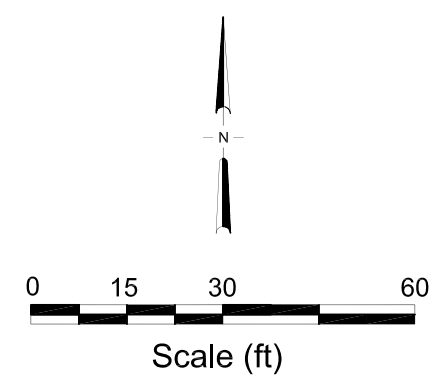


FIGURE  
**2**

Basemap modified from data from Virgil Chavez Land Surveying and drawing provided by Geomatrix



APPENDIX A

BLAINE TECH SERVICES, INC. -  
GROUNDWATER MONITORING REPORT

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**BLAINE**  
TECH SERVICES INC.

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GROUNDWATER SAMPLING SPECIALISTS  
SINCE 1985

January 11, 2010

Denis Brown  
Shell Oil Products US  
20945 South Wilmington Avenue  
Carson, CA 90810

Fourth Quarter 2009 Groundwater Monitoring at  
Former Shell Service Station  
2301-2307 Lincoln Avenue  
Alameda, CA

Monitoring performed on December 23, 2009

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Groundwater Monitoring Report **091223-IW-1**

This report covers the routine monitoring of groundwater wells at this former Shell service station. In accordance with standard procedures that conform to Regional Water Quality Control Board requirements, routine field data collection includes depth to water, total well depth, thickness of any separate immiscible layer, water column volume, calculated purge volume (if applicable), elapsed evacuation time (if applicable), total volume of water removed (if applicable), and standard water parameter instrument readings. Sample material is collected, contained, stored, and transported to the laboratory in conformance with EPA standards. Purgewater (if applicable) is, likewise, collected and transported to the Martinez Refining Company.

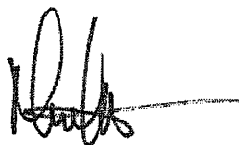
Basic field information is presented alongside analytical values excerpted from the laboratory report in the cumulative table of **WELL CONCENTRATIONS**. The full analytical report for the most recent samples and the field data sheets are attached to this report.

At a minimum, Blaine Tech Services, Inc. field personnel are certified on completion of a forty-hour Hazardous Materials and Emergency Response training course per 29 CFR 1910.120. Field personnel are also enrolled in annual eight-hour refresher courses.

Blaine Tech Services, Inc. conducts sampling and documentation assignments of this type as an independent third party. Our activities at this site consisted of objective data and sample collection only. No interpretation of analytical results, defining of hydrological conditions or formulation of recommendations was performed.

Please call if you have any questions.

Yours truly,



Mike Ninokata  
Project Manager

MN/np

attachments: Cumulative Table of WELL CONCENTRATIONS  
Certified Analytical Report  
Field Data Sheets

cc: Anni Kreml  
Conestoga-Rovers & Associates  
5900 Hollis St., Suite A  
Emeryville, CA 94608

**WELL CONCENTRATIONS**  
**2301-2307 Lincoln Avenue**  
**Alameda, CA**

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)
MW-1	3/16/2009	NA	NA	NA	NA	NA	25.77	8.24	17.53
MW-1	3/27/2009	13,000	9.7	<10	<10	<10	25.77	7.09	18.68
MW-1	5/22/2009	3,900	2.6	<2.0	<2.0	<2.0	25.77	7.70	18.07
MW-1	9/23/2009	17,000	8.1	<10	<10	<10	25.77	9.27	16.50
<b>MW-1</b>	<b>12/23/2009</b>	<b>9,700</b>	<b>8.7</b>	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;10</b>	<b>25.77</b>	<b>8.07</b>	<b>17.70</b>
MW-2	3/16/2009	NA	NA	NA	NA	NA	26.09	8.54	17.55
MW-2	3/27/2009	<50	<0.50	<1.0	<1.0	<1.0	26.09	8.16	17.93
MW-2	5/22/2009	<50	<0.50	<1.0	<1.0	<1.0	26.09	7.88	18.21
MW-2	9/23/2009	<50	<0.50	<1.0	<1.0	<1.0	26.09	9.21	16.88
<b>MW-2</b>	<b>12/23/2009</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>26.09</b>	<b>8.04</b>	<b>18.05</b>
MW-3	3/16/2009	NA	NA	NA	NA	NA	25.56	6.06	19.50
MW-3	3/27/2009	<50	<0.50	<1.0	<1.0	<1.0	25.56	6.37	19.19
MW-3	5/22/2009	<50	<0.50	<1.0	<1.0	<1.0	25.56	7.35	18.21
MW-3	9/23/2009	64	<0.50	<1.0	<1.0	<1.0	25.56	8.79	16.77
<b>MW-3</b>	<b>12/23/2009</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>25.56</b>	<b>7.62</b>	<b>17.94</b>
MW-4	3/16/2009	NA	NA	NA	NA	NA	26.60	7.43	19.17
MW-4	3/27/2009	3,900	170	25	190	360	26.60	7.50	19.10
MW-4	5/22/2009	3,500	280	19	270	220	26.60	8.43	18.17
MW-4	9/23/2009	920	170	3.4	14	16	26.60	9.90	16.70
<b>MW-4</b>	<b>12/23/2009</b>	<b>2,700</b>	<b>200</b>	<b>5.5</b>	<b>190</b>	<b>56</b>	<b>26.60</b>	<b>8.85</b>	<b>17.75</b>

**WELL CONCENTRATIONS**  
**2301-2307 Lincoln Avenue**  
**Alameda, CA**

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)
MW-5	3/16/2009	NA	NA	NA	NA	NA	26.63	7.21	19.42
MW-5	3/27/2009	<50	<0.50	<1.0	<1.0	<1.0	26.63	7.74	18.89
MW-5	5/22/2009	<50	<0.50	<1.0	<1.0	<1.0	26.63	8.42	18.21
MW-5	9/23/2009	<50	<0.50	<1.0	<1.0	<1.0	26.63	9.89	16.74
<b>MW-5</b>	<b>12/23/2009</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>26.63</b>	<b>8.81</b>	<b>17.82</b>
MW-6	3/16/2009	NA	NA	NA	NA	NA	26.61	7.31	19.30
MW-6	3/27/2009	<50	<0.50	<1.0	<1.0	<1.0	26.61	7.82	18.79
MW-6	5/22/2009	<50	<0.50	<1.0	<1.0	<1.0	26.61	8.43	18.18
MW-6	9/23/2009	<50	<0.50	<1.0	<1.0	<1.0	26.61	9.87	16.74
<b>MW-6</b>	<b>12/23/2009</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>26.61</b>	<b>8.77</b>	<b>17.84</b>
MW-7	3/16/2009	NA	NA	NA	NA	NA	26.69	7.35	19.34
MW-7	3/27/2009	54	<0.50	<1.0	<1.0	<1.0	26.69	7.62	19.07
MW-7	5/22/2009	<50	<0.50	<1.0	<1.0	<1.0	26.69	8.50	18.19
MW-7	9/23/2009	<50	<0.50	<1.0	<1.0	<1.0	26.69	10.00	16.69
<b>MW-7</b>	<b>12/23/2009</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>26.69</b>	<b>8.86</b>	<b>17.83</b>
MW-8	3/16/2009	NA	NA	NA	NA	NA	26.05	6.81	19.24
MW-8	3/27/2009	<50	<0.50	<1.0	<1.0	<1.0	26.05	7.04	19.01
MW-8	5/22/2009	<50	<0.50	<1.0	<1.0	<1.0	26.05	7.76	18.29
MW-8	9/23/2009	<50	<0.50	<1.0	<1.0	<1.0	26.05	9.27	16.78
<b>MW-8</b>	<b>12/23/2009</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>26.05</b>	<b>7.98</b>	<b>18.07</b>



**WELL CONCENTRATIONS**  
**2301-2307 Lincoln Avenue**  
**Alameda, CA**

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)
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Abbreviations:

TPPH = Total petroleum hydrocarbons as gasoline by EPA Method 8260B

BTEX = Benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B

TOC = Top of Casing Elevation

GW = Groundwater

DO = Dissolved Oxygen

ug/L = Parts per billion

ppm = Parts per million

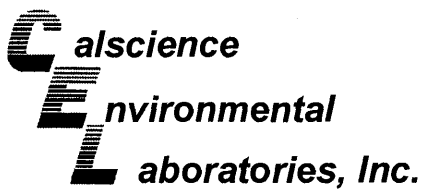
MSL = Mean sea level

ft. = Feet

<n = Below detection limit

NA = Not applicable

ND = Not detected



January 07, 2010

Michael Ninokata  
Blaine Tech Services, Inc.  
1680 Rogers Avenue  
San Jose, CA 95112-1105

Subject: **Calscience Work Order No.: 09-12-2118**  
Client Reference: **2301 - 2307 Lincoln Ave., Alameda, CA**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 12/24/2009 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in cursive script that reads "Philip Savelle for".

Calscience Environmental  
Laboratories, Inc.  
Xuan H. Dang  
Project Manager

A handwritten signature in cursive script, likely belonging to Xuan H. Dang, located at the bottom left of the page.

**Analytical Report**



Blaine Tech Services, Inc.  
 1680 Rogers Avenue  
 San Jose, CA 95112-1105

Date Received: 12/24/09  
 Work Order No: 09-12-2118  
 Preparation: EPA 5030B  
 Method: LUFT GC/MS / EPA 8260B  
 Units: ug/L

Project: 2301 - 2307 Lincoln Ave., Alameda, CA

Page 1 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	09-12-2118-1-A	12/23/09 11:40	Aqueous	GC/MS W	12/29/09	12/30/09 07:52	091229L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	8.7	5.0	10		Xylenes (total)	ND	10	10	
Ethylbenzene	ND	10	10		TPPH	9700	500	10	
Toluene	ND	10	10						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
Dibromofluoromethane	96	80-132			1,2-Dichloroethane-d4	99	80-141		
Toluene-d8	103	80-120			Toluene-d8-TPPH	105	88-112		
1,4-Bromofluorobenzene	104	76-120							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	09-12-2118-2-A	12/23/09 11:00	Aqueous	GC/MS W	12/29/09	12/30/09 08:21	091229L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Xylenes (total)	ND	1.0	1	
Ethylbenzene	ND	1.0	1		TPPH	ND	50	1	
Toluene	ND	1.0	1						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
Dibromofluoromethane	96	80-132			1,2-Dichloroethane-d4	101	80-141		
Toluene-d8	99	80-120			Toluene-d8-TPPH	100	88-112		
1,4-Bromofluorobenzene	99	76-120							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	09-12-2118-3-A	12/23/09 11:20	Aqueous	GC/MS W	12/29/09	12/30/09 08:50	091229L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Xylenes (total)	ND	1.0	1	
Ethylbenzene	ND	1.0	1		TPPH	ND	50	1	
Toluene	ND	1.0	1						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
Dibromofluoromethane	97	80-132			1,2-Dichloroethane-d4	103	80-141		
Toluene-d8	99	80-120			Toluene-d8-TPPH	100	88-112		
1,4-Bromofluorobenzene	99	76-120							

RL - Reporting Limit    DF - Dilution Factor    Qual - Qualifiers

## Analytical Report



Blaine Tech Services, Inc.  
1680 Rogers Avenue  
San Jose, CA 95112-1105

Date Received: 12/24/09  
Work Order No: 09-12-2118  
Preparation: EPA 5030B  
Method: LUFT GC/MS / EPA 8260B  
Units: ug/L

Project: 2301 - 2307 Lincoln Ave., Alameda, CA

Page 2 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	09-12-2118-4-A	12/23/09 12:35	Aqueous	GC/MS W	12/29/09	12/30/09 09:19	091229L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	200	1.0	2		Xylenes (total)	56	2.0	2	
Ethylbenzene	190	2.0	2		TPPH	2700	100	2	
Toluene	5.5	2.0	2						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
Dibromofluoromethane	98	80-132			1,2-Dichloroethane-d4	101	80-141		
Toluene-d8	99	80-120			Toluene-d8-TPPH	99	88-112		
1,4-Bromofluorobenzene	101	76-120							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-5	09-12-2118-5-A	12/23/09 11:50	Aqueous	GC/MS W	12/30/09	12/30/09 14:34	091230L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Xylenes (total)	ND	1.0	1	
Ethylbenzene	ND	1.0	1		TPPH	ND	50	1	
Toluene	ND	1.0	1						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
Dibromofluoromethane	94	80-132			1,2-Dichloroethane-d4	100	80-141		
Toluene-d8	100	80-120			Toluene-d8-TPPH	100	88-112		
1,4-Bromofluorobenzene	98	76-120							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-6	09-12-2118-6-A	12/23/09 12:05	Aqueous	GC/MS W	12/30/09	12/30/09 16:01	091230L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Xylenes (total)	ND	1.0	1	
Ethylbenzene	ND	1.0	1		TPPH	ND	50	1	
Toluene	ND	1.0	1						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
Dibromofluoromethane	96	80-132			1,2-Dichloroethane-d4	98	80-141		
Toluene-d8	100	80-120			Toluene-d8-TPPH	101	88-112		
1,4-Bromofluorobenzene	97	76-120							

RL - Reporting Limit    DF - Dilution Factor    Qual - Qualifiers

**Analytical Report**



Blaine Tech Services, Inc.  
 1680 Rogers Avenue  
 San Jose, CA 95112-1105

Date Received: 12/24/09  
 Work Order No: 09-12-2118  
 Preparation: EPA 5030B  
 Method: LUFT GC/MS / EPA 8260B  
 Units: ug/L

Project: 2301 - 2307 Lincoln Ave., Alameda, CA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-7	09-12-2118-7-A	12/23/09 12:20	Aqueous	GC/MS W	12/30/09	12/30/09 16:30	091230L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Xylenes (total)	ND	1.0	1	
Ethylbenzene	ND	1.0	1		TPPH	ND	50	1	
Toluene	ND	1.0	1						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
Dibromofluoromethane	94	80-132			1,2-Dichloroethane-d4	102	80-141		
Toluene-d8	100	80-120			Toluene-d8-TPPH	100	88-112		
1,4-Bromofluorobenzene	99	76-120							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-8	09-12-2118-8-A	12/23/09 12:15	Aqueous	GC/MS W	12/30/09	12/30/09 16:59	091230L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Xylenes (total)	ND	1.0	1	
Ethylbenzene	ND	1.0	1		TPPH	ND	50	1	
Toluene	ND	1.0	1						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
Dibromofluoromethane	99	80-132			1,2-Dichloroethane-d4	104	80-141		
Toluene-d8	97	80-120			Toluene-d8-TPPH	98	88-112		
1,4-Bromofluorobenzene	99	76-120							

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-767-3,065	N/A	Aqueous	GC/MS W	12/29/09	12/30/09 02:05	091229L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Xylenes (total)	ND	1.0	1	
Ethylbenzene	ND	1.0	1		TPPH	ND	50	1	
Toluene	ND	1.0	1						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
Dibromofluoromethane	97	80-132			1,2-Dichloroethane-d4	98	80-141		
Toluene-d8	100	80-120			Toluene-d8-TPPH	100	88-112		
1,4-Bromofluorobenzene	98	76-120							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

## Analytical Report



Blaine Tech Services, Inc.  
 1680 Rogers Avenue  
 San Jose, CA 95112-1105

Date Received: 12/24/09  
 Work Order No: 09-12-2118  
 Preparation: EPA 5030B  
 Method: LUFT GC/MS / EPA 8260B  
 Units: ug/L

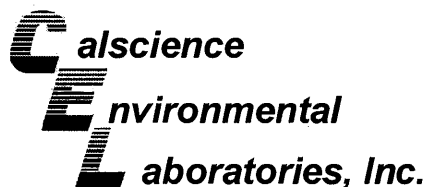
Project: 2301 - 2307 Lincoln Ave., Alameda, CA

Page 4 of 4

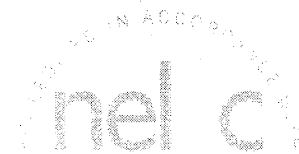
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-767-3,067	N/A	Aqueous	GC/MS W	12/30/09	12/30/09 14:05	091230L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Xylenes (total)	ND	1.0	1	
Ethylbenzene	ND	1.0	1		TPPH	ND	50	1	
Toluene	ND	1.0	1						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
Dibromofluoromethane	95	80-132			1,2-Dichloroethane-d4	100	80-141		
Toluene-d8	101	80-120			Toluene-d8-TPPH	101	88-112		
1,4-Bromofluorobenzene	97	76-120							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



## Quality Control - Spike/Spike Duplicate



Blaine Tech Services, Inc.  
1680 Rogers Avenue  
San Jose, CA 95112-1105

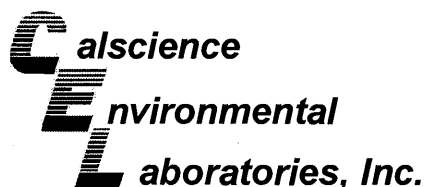
Date Received: 12/24/09  
Work Order No: 09-12-2118  
Preparation: EPA 5030B  
Method: LUFT GC/MS / EPA 8260B

Project 2301 - 2307 Lincoln Ave., Alameda, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-12-2082-1	Aqueous	GC/MS W	12/29/09	12/29/09	091229S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	94	93	72-120	1	0-20	
Carbon Tetrachloride	83	89	63-135	7	0-20	
Chlorobenzene	97	98	80-120	1	0-20	
1,2-Dibromoethane	96	103	80-120	6	0-20	
1,2-Dichlorobenzene	94	95	80-120	2	0-20	
1,1-Dichloroethene	94	96	60-132	2	0-24	
Ethylbenzene	98	99	78-120	1	0-20	
Toluene	93	93	74-122	0	0-20	
Trichloroethene	98	96	69-120	2	0-20	
Vinyl Chloride	83	86	58-130	3	0-20	
Methyl-t-Butyl Ether (MTBE)	93	97	72-126	3	0-21	
Tert-Butyl Alcohol (TBA)	90	91	72-126	2	0-20	
Diisopropyl Ether (DIPE)	98	99	71-137	0	0-23	
Ethyl-t-Butyl Ether (ETBE)	96	97	74-128	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	97	99	76-124	3	0-20	
Ethanol	101	90	35-167	12	0-48	

RPD - Relative Percent Difference, CL - Control Limit



## Quality Control - Spike/Spike Duplicate



Blaine Tech Services, Inc.  
1680 Rogers Avenue  
San Jose, CA 95112-1105

Date Received: 12/24/09  
Work Order No: 09-12-2118  
Preparation: EPA 5030B  
Method: LUFT GC/MS / EPA  
8260B

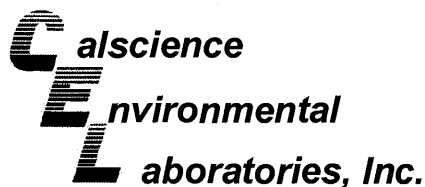
Project 2301 - 2307 Lincoln Ave., Alameda, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
MW-5	Aqueous	GC/MS W	12/30/09	12/30/09	091230S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	95	93	72-120	2	0-20	
Carbon Tetrachloride	78	87	63-135	11	0-20	
Chlorobenzene	97	98	80-120	1	0-20	
1,2-Dibromoethane	98	102	80-120	3	0-20	
1,2-Dichlorobenzene	95	94	80-120	0	0-20	
1,1-Dichloroethene	94	96	60-132	2	0-24	
Ethylbenzene	97	99	78-120	2	0-20	
Toluene	96	93	74-122	4	0-20	
Trichloroethene	97	95	69-120	1	0-20	
Vinyl Chloride	86	81	58-130	6	0-20	
Methyl-t-Butyl Ether (MTBE)	96	98	72-126	2	0-21	
Tert-Butyl Alcohol (TBA)	87	97	72-126	11	0-20	
Diisopropyl Ether (DIPE)	97	100	71-137	4	0-23	
Ethyl-t-Butyl Ether (ETBE)	94	98	74-128	3	0-20	
Tert-Amyl-Methyl Ether (TAME)	97	96	76-124	1	0-20	
Ethanol	117	107	35-167	9	0-48	

RPD - Relative Percent Difference, CL - Control Limit





## Quality Control - LCS/LCS Duplicate



Blaine Tech Services, Inc.  
1680 Rogers Avenue  
San Jose, CA 95112-1105

Date Received: N/A  
Work Order No: 09-12-2118  
Preparation: EPA 5030B  
Method: LUFT GC/MS / EPA 8260B

Project: 2301 - 2307 Lincoln Ave., Alameda, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-12-767-3,065	Aqueous	GC/MS W	12/29/09	12/30/09	091229L02		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	96	96	80-122	73-129	0	0-20	
Carbon Tetrachloride	86	91	68-140	56-152	5	0-20	
Chlorobenzene	98	99	80-120	73-127	1	0-20	
1,2-Dibromoethane	100	102	80-121	73-128	2	0-20	
1,2-Dichlorobenzene	94	95	80-120	73-127	0	0-20	
1,1-Dichloroethene	98	98	72-132	62-142	1	0-25	
Ethylbenzene	98	99	80-126	72-134	1	0-20	
Toluene	97	98	80-121	73-128	1	0-20	
Trichloroethene	98	99	80-123	73-130	1	0-20	
Vinyl Chloride	93	96	67-133	56-144	4	0-20	
Methyl-t-Butyl Ether (MTBE)	100	99	75-123	67-131	1	0-20	
Tert-Butyl Alcohol (TBA)	93	93	75-123	67-131	0	0-20	
Diisopropyl Ether (DIPE)	99	100	71-131	61-141	0	0-20	
Ethyl-t-Butyl Ether (ETBE)	97	98	76-124	68-132	0	0-20	
Tert-Amyl-Methyl Ether (TAME)	100	101	80-123	73-130	0	0-20	
Ethanol	107	97	61-139	48-152	10	0-27	
TPPH	90	90	65-135	53-147	0	0-30	

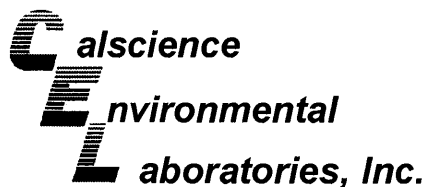
Total number of LCS compounds : 17

Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference, CL - Control Limit



## Quality Control - LCS/LCS Duplicate

Blaine Tech Services, Inc.  
1680 Rogers Avenue  
San Jose, CA 95112-1105

Date Received: N/A  
Work Order No: 09-12-2118  
Preparation: EPA 5030B  
Method: LUFT GC/MS / EPA 8260B

Project: 2301 - 2307 Lincoln Ave., Alameda, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-12-767-3,067	Aqueous	GC/MS W	12/30/09	12/30/09	091230L01		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	99	98	80-122	73-129	1	0-20	
Carbon Tetrachloride	84	87	68-140	56-152	4	0-20	
Chlorobenzene	100	100	80-120	73-127	1	0-20	
1,2-Dibromoethane	103	105	80-121	73-128	2	0-20	
1,2-Dichlorobenzene	96	95	80-120	73-127	0	0-20	
1,1-Dichloroethene	99	100	72-132	62-142	1	0-25	
Ethylbenzene	101	101	80-126	72-134	0	0-20	
Toluene	98	97	80-121	73-128	1	0-20	
Trichloroethene	102	101	80-123	73-130	1	0-20	
Vinyl Chloride	87	92	67-133	56-144	6	0-20	
Methyl-t-Butyl Ether (MTBE)	100	99	75-123	67-131	1	0-20	
Tert-Butyl Alcohol (TBA)	88	90	75-123	67-131	2	0-20	
Diisopropyl Ether (DIPE)	101	100	71-131	61-141	2	0-20	
Ethyl-t-Butyl Ether (ETBE)	99	99	76-124	68-132	0	0-20	
Tert-Amyl-Methyl Ether (TAME)	102	100	80-123	73-130	1	0-20	
Ethanol	108	97	61-139	48-152	11	0-27	
TPPH	95	89	65-135	53-147	7	0-30	

Total number of LCS compounds : 17

Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference, CL - Control Limit

**Glossary of Terms and Qualifiers**

Work Order Number: 09-12-2118

<u>Qualifier</u>	<u>Definition</u>
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.  Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture.

LAB (LOCATION)

- CALSCIENCE ( )
- SPL ( )
- XENCO ( )
- TEST AMERICA ( )
- OTHER ( )



# Shell Oil Products Chain Of Custody Record

<b>Please Check Appropriate Box:</b>			<b>Print Bill To Contact Name:</b>				<b>INCIDENT # (ENV SERVICES)</b>				<input type="checkbox"/> CHECK IF NO INCIDENT # APPLIES				
<input type="checkbox"/> ENV. SERVICES	<input type="checkbox"/> MOTIVA RETAIL	<input type="checkbox"/> SHELL RETAIL	Peter Schaefer 060204				9	7	7	6	7	0	4	4	DATE: 12/23/09
<input type="checkbox"/> MOTIVA SD&CM	<input checked="" type="checkbox"/> CONSULTANT	<input type="checkbox"/> LUBES	PO #				SAP #				PAGE: 1 of 1				
<input type="checkbox"/> SHELL PIPELINE	<input type="checkbox"/> OTHER														

<b>SAMPLING COMPANY:</b> Blaine Tech Services		LOG CODE BTSS	<b>SITE ADDRESS: Street and City</b> 2301 - 2307 Lincoln Ave., Alameda		State CA	<b>GLOBAL ID NO</b> T06179714590		
ADDRESS: 1680 Rogers Ave, San Jose, CA 95112			EDF DELIVERABLE TO (Name, Company, Office Location) Anni Kremi, CRA, Emeryville Office		PHONE NO (510) 420-3335	E-MAIL shelledt@croworld.com	CONSULTANT PROJECT NO 091223-1W-1	
PROJECT CONTACT (Hardcopy or PDF Report to): Michael Ninokata - Copy to Shell.Lab.Billing@croworld.com			SAMPLER NAME(S) (Print) IAN WILLIAMS		LAB USE ONLY 09-12-2118		BTS #	
TELEPHONE (408)573-0555	FAX (408)573-7771	E-MAIL mnnokata@blainetech.com						

**TURNAROUND TIME (CALENDAR DAYS):**  
 STANDARD (14 DAY)   
 5 DAYS   
 3 DAYS   
 2 DAYS   
 24 HOURS   
 RESULTS NEEDED ON WEEKEND

LA - RWQCB REPORT FORMAT     UST AGENCY:

**SPECIAL INSTRUCTIONS OR NOTES :**

- SHELL CONTRACT RATE APPLIES
- STATE REIMBURSEMENT RATE APPLIES
- EDD NOT NEEDED
- RECEIPT VERIFICATION REQUESTED

**REQUESTED ANALYSIS**

LAB USE ONLY	Field Sample Identification	SAMPLING		MATRIX	PRESERVATIVE					NO. OF CONT.	TPH - Purgeable (8260B)	TPH - Extractable (8015M)	BTEX (8260B)	5 Oxygenates (8260B)	MTBE (8260B)	TBA (8260B)	DIPE (8260B)	TAME (8260B)	ETBE (8260B)	1,2 DCA (8260B)	EDB (8260B)	Ethanol (8260B)	Methanol (8015M)	TEMPERATURE ON RECEIPT °C	Container PID Readings or Laboratory Notes
		DATE	TIME		HCL	HNO3	H2SO4	NONE	OTHER																
1	MW-1	12/23/09	1140	W	X					3	X	X													
2	MW-2		1100		X					3	X	X													
3	MW-3		1120		X					3	X	X													
4	MW-4		1235		X					3	X	X													
5	MW-5		1150		X					3	X	X													
6	MW-6		1205		X					3	X	X													
7	MW-7		1220		X					3	X	X													
8	MW-8		1215		X					3	X	X													

Relinquished by: (Signature) 	Received by: (Signature) 	Date: 12/23/09	Time: 1330
Relinquished by: (Signature) 	Received by: (Signature) T. Drivalley CEC	Date: 12/23/09	Time: 1500
Relinquished by: (Signature) 	Received by: (Signature) CEC	Date: 12/24/09	Time: 0900

05/2/06 Revision



2118

**Ship From:**  
ALAN KEMP  
CAL SCIENCE- CONCORD  
5063 COMMERCIAL CIRCLE #H  
CONCORD, CA 94520

**Ship To:**  
SAMPLE RECEIVING  
CEL  
7440 LINCOLN WAY  
GARDEN GROVE, CA 92841

**COD:**  
\$0.00

**Reference:**  
BTS

**Delivery Instructions:**

**Signature Type:**  
SIGNATURE REQUIRED

**Tracking #:** 513272161

**NPS**

**ORC**

**D**

**GARDEN GROVE**

**D92843A**

78109665

Print Date : 12/23/09 16:31 PM

Package 1 of 2

Print All

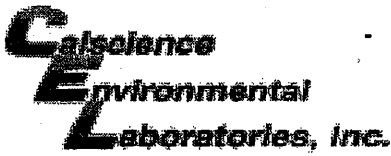
**LABEL INSTRUCTIONS:**

- Do not copy or reprint this label for additional shipments - each package must have a unique barcode.**
- STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.
  - STEP 2 - Fold this page in half.
  - STEP 3 - Securely attach this label to your package, do not cover the barcode.
  - STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

**ADDITIONAL OPTIONS:**

**TERMS AND CONDITIONS:**

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section. Our liability for loss or damage to any package is limited to your actual damages or \$100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is \$500. For other shipments the highest declared value is \$10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is \$500. Items of "extraordinary value" include, but are not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.



WORK ORDER #: 09-12-2118

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: BT S

DATE: 12/24/09

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0°C - 6.0°C, not frozen)

Temperature 2.0°C + 0.5°C (CF) = 2.5°C [X] Blank [ ] Sample

[ ] Sample(s) outside temperature criteria (PM/APM contacted by: \_\_\_\_\_).

[ ] Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

[ ] Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: [ ] Air [ ] Filter [ ] Metals Only [ ] PCBs Only

Initial: YL

CUSTODY SEALS INTACT:

[ ] Cooler [ ] \_\_\_\_\_ [ ] No (Not Intact) [X] Not Present [ ] N/A

Initial: YL

[ ] Sample [ ] \_\_\_\_\_ [ ] No (Not Intact) [X] Not Present

Initial: SP

SAMPLE CONDITION:

Table with 4 columns: Item, Yes, No, N/A. Rows include Chain-Of-Custody (COC) document(s) received with samples, COC document(s) received complete, Collection date/time, matrix, and/or # of containers logged in based on sample labels, No analysis requested, Sampler's name indicated on COC, Sample container label(s) consistent with COC, Sample container(s) intact and good condition, Correct containers and volume for analyses requested, Analyses received within holding time, Proper preservation noted on COC or sample container, Unpreserved vials received for Volatiles analysis, Volatile analysis container(s) free of headspace, Tedlar bag(s) free of condensation.

CONTAINER TYPE:

Solid: [ ] 4ozCGJ [ ] 8ozCGJ [ ] 16ozCGJ [ ] Sleeve [ ] EnCores® [ ] TerraCores® [ ] \_\_\_\_\_

Water: [ ] VOA [X] VOAh [ ] VOAna2 [ ] 125AGB [ ] 125AGBh [ ] 125AGBp [ ] 1AGB [ ] 1AGBna2 [ ] 1AGBs

[ ] 500AGB [ ] 500AGJ [ ] 500AGJs [ ] 250AGB [ ] 250CGB [ ] 250CGBs [ ] 1PB [ ] 500PB [ ] 500PBna

[ ] 250PB [ ] 250PBn [ ] 125PB [ ] 125PBzanna [ ] 100PJ [ ] 100PJna2 [ ] \_\_\_\_\_ [ ] \_\_\_\_\_ [ ] \_\_\_\_\_

Air: [ ] Tedlar® [ ] Summa® Other: [ ] \_\_\_\_\_ Trip Blank Lot#: \_\_\_\_\_

Checked by: [Signature]

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope

Reviewed by: [Signature]

Preservative: h: HCL n: HNO3 na2:Na2S2O3 Na: NaOH p: H3PO4 s: H2SO4 zanna: ZnAc2+NaOH f: Field-filtered

Scanned by: [Signature]

## WELL GAUGING DATA

Project # 091223-1W-1 Date 12/23/09 Client SHELL

Site 2301-2307 LINCOLN AVE, ALAMEDA, CA

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	Notes
MW-1	0742	1					8.07	12.90	↓	
MW-2	0800	1				8.04	12.41			
MW-3	0750	1				7.62	11.53			
MW-4	0831	4				8.85	17.70			
MW-5	0809	4				8.81	17.87			
MW-6	0822	4				8.77	17.80			
MW-7	0844	4				8.86	17.68			
MW-8	0852	4				7.98	17.50			

# SHELL WELL MONITORING DATA SHEET

BTS #: 091223-1W-1	Site: 2301-2307 LINCOLN AVE, ALAMEDA
Sampler: 1W	Date: 12/23/09
Well I.D.: MW-1	Well Diameter: 2 3 4 6 8 <u>1"</u>
Total Well Depth (TD): 12.90	Depth to Water (DTW): 8.07
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 9.04	

Purge Method: Bailer	Waterra	Sampling Method: <input checked="" type="checkbox"/> Bailer
Disposable Bailer	Peristaltic	Disposable Bailer
Positive Air Displacement	Extraction Pump	Extraction Port
Electric Submersible	Other: <u>NEW TUBING, CHECK VALVE</u>	Dedicated Tubing
		Other: <u>NEW TUBING, CHECK VALVE</u>

0.20 (Gals.) X	<u>3</u>	= 0.60 Gals.
1 Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F)	pH	Cond. (mS or <del>µS</del> )	Turbidity (NTUs)	Gals. Removed	Observations
1128	58.3	8.28	476	>1000	0.2	STRONG ODOR
1130	59.6	7.62	518	71000	0.4	"
1132	59.7	7.60	522	>1000	0.6	"

Did well dewater? Yes  No  Gallons actually evacuated: 0.6

Sampling Date: 12/23/09 Sampling Time: 1140 Depth to Water: 8.92

Sample I.D.: MW-1 Laboratory: CalScience Columbia Other \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: SEE COC

EB I.D. (if applicable): @ \_\_\_\_\_ Time Duplicate I.D. (if applicable): \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: \_\_\_\_\_

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
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O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV
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# SHELL OIL WELL MONITORING DATA SHEET

BTS #: 091223-1W-1	Site: 2301-2307 LINCOLN AVE, ALAMEDA
Sampler: 1W	Date: 12/23/09
Well I.D.: MW-3	Well Diameter: 2 3 4 6 8 1"
Total Well Depth (TD): 11.53	Depth to Water (DTW): 7.62
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 8.48	

Purge Method: Bailer	Waterra	Sampling Method: <input checked="" type="checkbox"/> Bailer
Disposable Bailer	Peristaltic	Disposable Bailer
Positive Air Displacement	Extraction Pump	Extraction Port
Electric Submersible	Other: <u>NEW TUBING, CHECK VALVE</u>	Dedicated Tubing
		Other: <u>NEW TUBING, CHECK VALVE</u>

$0.2 \text{ (Gals.)} \times 3 = 0.6 \text{ Gals.}$ <p>I Case Volume      Specified Volumes      Calculated Volume</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius <sup>2</sup> * 0.163														

Time	Temp (°F)	pH	Cond. (mS or <u>µS</u> )	Turbidity (NTUs)	Gals. Removed	Observations
1108	59.6	7.22	812	>1000	0.2	
1110	60.8	7.18	796	>1000	0.4	
1112	60.5	7.17	794	>1000	0.6	

Did well dewater? Yes  No  Gallons actually evacuated: 0.6

Sampling Date: 12/23/09      Sampling Time: 1120      Depth to Water: 8.44

Sample I.D.: MW-3      Laboratory: CalScience Columbia Other \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: SEE COC

EB I.D. (if applicable): @ \_\_\_\_\_ Time Duplicate I.D. (if applicable): \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: \_\_\_\_\_

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV



**SHELL WELL MONITORING DATA SHEET**

BTS #: 091223-1W-1	Site: 2301-2307 LINCOLN AVE, ALAMEDA
Sampler: 1W	Date: 12/23/09
Well I.D.: MW-5	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth (TD): 17.87	Depth to Water (DTW): 8.81
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 10.63	

Purge Method: Bailer	Waterra	Sampling Method: <input checked="" type="checkbox"/> Bailer
Disposable Bailer	Peristaltic	Disposable Bailer
Positive Air Displacement	Extraction Pump	Extraction Port
<input checked="" type="checkbox"/> Electric Submersible	Other _____	Dedicated Tubing
		Other: _____

$5.9$ (Gals.) X $3$ = $17.7$ Gals. 1 Case Volume      Specified Volumes      Calculated Volume	<table border="1" style="width:100%; border-collapse: collapse; font-size: small;"> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius <sup>2</sup> * 0.163														

Time	Temp (°F)	pH	Cond. (mS or <u>µS</u> )	Turbidity (NTUs)	Gals. Removed	Observations
0910	65.7	7.76	764	54	5.9	
0911	68.0	7.81	778	113	11.8	
0912	68.2	7.83	774	273	17.7	DTW = 12.86

Did well dewater? Yes  No  Gallons actually evacuated: 17.7

Sampling Date: 12/23/09      Sampling Time: 1150      Depth to Water: 8.85

Sample I.D.: MW-5      Laboratory: CalScience Columbia Other \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: SEE COC

EB I.D. (if applicable): @ \_\_\_\_\_ Time Duplicate I.D. (if applicable): \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: \_\_\_\_\_

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
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O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV
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**SHELL WELL MONITORING DATA SHEET**

BTS #: 091223-1W-1	Site: 2301-2307 LINCOLN AVE, ALAMEDA
Sampler: 1W	Date: 12/23/09
Well I.D.: MW-6	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth (TD): 17.80	Depth to Water (DTW): 8.77
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 10.58	

Purge Method: Bailer	Waterra	Sampling Method: <input checked="" type="checkbox"/> Bailer
Disposable Bailer	Peristaltic	Disposable Bailer
Positive Air Displacement	Extraction Pump	Extraction Port
<input checked="" type="checkbox"/> Electric Submersible	Other _____	Dedicated Tubing

<p>5.9 (Gals.) X 3 = 17.7 Gals.</p> <p>1 Case Volume      Specified Volumes      Calculated Volume</p>	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius <sup>2</sup> * 0.163														

Time	Temp (°F)	pH	Cond. (mS or <u>µS</u> )	Turbidity (NTUs)	Gals. Removed	Observations
0929	62.9	7.75	795	31	5.9	
0930	67.9	7.44	772	127	11.8	
0931	68.1	7.49	779	65	17.7	DTW = 15.02

Did well dewater? Yes  No  Gallons actually evacuated: 17.7

Sampling Date: 12/23/09      Sampling Time: 1205      Depth to Water: 8.82

Sample I.D.: MW-6      Laboratory: CalScience Columbia Other \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: SEE COC

EB I.D. (if applicable): @ \_\_\_\_\_ Time Duplicate I.D. (if applicable): \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: \_\_\_\_\_

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
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O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV
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## SHELL WELL MONITORING DATA SHEET

BTS #: 091223-1W-1	Site: 2301-2307 LINCOLN AVE, ALAMEDA
Sampler: 1W	Date: 12/23/09
Well I.D.: MW-8	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth (TD): 17.50	Depth to Water (DTW): 7.98
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 9.88	

Purge Method: Bailer Disposable Bailer Positive Air Displacement <input checked="" type="checkbox"/> Electric Submersible	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: <input checked="" type="checkbox"/> Bailer Disposable Bailer Extraction Port Dedicated Tubing Other: _____
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6.2 (Gals.) X	3	= 18.6 Gals.
I Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F)	pH	Cond. (mS or <u>µS</u> )	Turbidity (NTUs)	Gals. Removed	Observations
0949	60.6	7.46	462	132	6.2	
0950	63.7	7.38	382	462	12.4	
0951	63.9	7.34	388	770	18.6	DTW=14.71

Did well dewater? Yes  No  Gallons actually evacuated: 18.6

Sampling Date: 12/23/09 Sampling Time: 1215 Depth to Water: 8.10

Sample I.D.: MW-8 Laboratory: CalScience Columbia Other \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: SEE COC

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
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O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV
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